AMENDMENTS TO THE CLAIMS

The following listing of claims will replace all prior versions and listings of claims in the application.

LISTING OF CLAIMS

1-52. (Cancelled)

53. (Previously Presented) The communication system according to Claim 54, wherein said active resistive summer includes an operational amplifier.

54. (Previously Presented) A communication system including a first transmission channel with a first end and a second end, the first end coupled to a first transformer and the second end coupled to a second transformer, a first end transceiver transmitting and receiving signals via the first transformer and a second end transceiver transmitting and receiving signals via the second transformer, a first signal being supplied at the first end, the first signal comprising a transmission signal component of the first transceiver and a receive signal component from the second transceiver, said communication system comprising:

a replica transmitter that generates a replica of the transmission signal component of the first transceiver;

a filter to filter the replica signal; and

an active resistive summer receiving the first signal and the filtered replica signal as inputs to reduce the transmission signal component at an output of the active resistive summer, wherein said active resistive summer includes an operational

amplifier having a first polarity input terminal, a second polarity input terminal, and an output terminal, said active resistive summer further comprising:

a feedback element in communication with the output terminal and the second polarity input terminal;

a first resistor in communication with the second polarity input terminal and the first signal; and

a second resistor in communication with the second polarity input terminal and the filtered replica signal.

55. (Previously Presented) The communication system according to Claim 54, wherein the active resistive summer receives an inverted replica signal as an input, and

wherein a third resistor is in communication with the inverted replica signal and the second polarity input terminal.

56. (Original) The communication system according to Claim 55, wherein the active resistive summer includes an input for baseline correction current.

57. (Original) The communication system according to Claim 56, further comprising a charge pump that controls the current for the baseline current.

58. (Original) The communication system according to Claim 57, wherein the charge pump controls current based on a digital error between an equalized baseline signal and a sliced baseline signal.

59. (Original) The communication system according to claim 56, wherein the active resistive summer includes an input for common-mode shift current.

60. (Cancelled)

61. (Previously Presented) The communication system according to Claim 62, wherein said summing means includes means for amplifying.

62. (Previously Presented) A communication system including a first transmission channel with a first end and a second end, the first end coupled to a first transformer and the second end coupled to a second transformer, a first end transceiver transmitting and receiving signals via the first transformer and a second end transceiver transmitting and receiving signals via the second transformer, a first signal being supplied at the first end, the first signal comprising a transmission signal component of the first transceiver and a receive signal component of the second transceiver, said communication system comprising:

means for replicating the transmission signal component of the first transceiver;

means for filtering an output of the replicating means; and

means for summing the first signal and an output of the filtering means to reduce the transmission signal at an output of the summing means, wherein said summing means includes means for amplifying having a first polarity input terminal, a second polarity input terminal, and an output terminal, said summing means further comprising:

feedback means for communicating between the output terminal and the second polarity input terminal;

first resistive means for communicating between the second polarity input terminal and the first signal; and

second resistive means for communicating between the second polarity input terminal and the filtered replica transmission signal component.

63. (Previously Presented) The communication system according to Claim 62, wherein the summing means further sums an inverted replica transmission signal component, and

wherein a third resistor is in communication with the inverted replica transmission signal component and the second polarity input terminal.

64. (Original) The communication system according to claim 63, wherein the summing means includes means for receiving a baseline correction current.

65. (Original) The communication system according to Claim 64, further comprising means for controlling the current for the baseline current.

66. (Original) The communication system according to Claim 65, wherein the pumping means controls current based on a digital error between an equalized baseline signal and a sliced baseline signal.

67. (Original) The communication system according to claim 64, wherein the communication system includes means for controlling common-mode voltage.

68. (Cancelled)

69. (Previously Presented) The method according to Claim 70, wherein the active resistive summer includes an operational amplifier.

70. (Previously Presented) A method in a communication system including a first transmission channel with a first end and a second end, the first end coupled to a first transformer and the second end coupled to a second transformer, a first end transceiver transmitting and receiving signals via the first transformer and a second end transceiver transmitting and receiving signals via the second transformer, a first signal being supplied at the first end, the first signal comprising a transmission signal component of the first transceiver and a receive signal component of the second transceiver, said method comprising the steps of:

generating a replica of the transmission signal component of the first transceiver;

filtering the replica signal; and

summing with an active resistive summer the first signal and the replica signal to reduce the transmission signal at an output of the active resistive summer, wherein the active resistive summer includes an operational amplifier having a first polarity input terminal, a second polarity input terminal, and an output terminal, said active resistive summer further comprising:

a feedback element in communication with the output terminal and the second polarity input terminal;

a first resistor in communication with the second polarity input terminal and the first signal; and

a second resistor in communication with the second polarity input terminal and the filtered replica transmission signal.

71. (Previously Presented) The method according to Claim 70, wherein the active resistive summer sums an inverted replica transmission signal component, and

wherein the third resistor is in communication with the inverted replica transmission signal component and the second polarity input terminal.

72. (Original) The method according to Claim 71, further comprising the step of inputting baseline correction current into the active resistive summer.

73. (Original) The method according to Claim 72, further comprising a step of controlling the baseline current with a charge pump.

74. (Original) The method according to Claim 73, wherein the charge pump controls current based on an error between an equalized baseline signal and a sliced baseline signal.

75. (Original) The method according to claim 72, further comprising the step of inputting a common-mode shift current into the active resistive summer to control a common-mode voltage of the operational amplifier.

76-96. (Cancelled)

97. (Previously Presented) An electrical circuit in a communications channel comprising:

an active resistive summer,

wherein the active resistive summer comprises an operational amplifier with an inverting feedback, and

wherein the active resistive summer further comprises:

an input for a composite signal, the composite signal including a transmission signal component and a receive signal component;

an input for a replica transmission signal; and

an output for a receive signal which comprises the composite signal minus the replica signal,

wherein the operational amplifier includes a first polarity input terminal, a second polarity input terminal, and an output terminal, and

wherein the active resistive summer further comprises:

a feedback element in communication with the output terminal and the second polarity input terminal;

a first resistor in communication with the second polarity input terminal and the composite signal; and

a second resistor in communication with the second polarity input terminal and the replica transmission signal.

98. (Previously Presented) The electrical circuit according to Claim 97, wherein the replica transmission signal comprises a high pass signal.

99. (Previously Presented) The electrical circuit according to Claim 97, wherein the replica transmission signal comprises a negative replica transmission signal as a first signal and a low pass replica transmission signal as a second signal,

wherein the second resistor comprises a third resistor and a fourth resistor, and

wherein the third resistor is in communication with the first signal and the second polarity input terminal and the fourth resistor is in communication with the second signal and the second polarity input terminal.

100. (Previously Presented) The electrical circuit according to Claim 97, wherein the active resistive summer further comprises an input for receiving a current for baseline correction.

101. (Previously Presented) The electrical circuit according to Claim 100, further comprising a charge pump to control the current for the baseline current.

102. (Previously Presented) The electrical circuit according to Claim 101, wherein the charge pump controls current based on an error between an equalized baseline signal and a sliced baseline signal.

103. (Previously Presented) The electrical circuit according to Claim 100, wherein the active resistive summer further comprises an input to receive a common-mode shift current.

104. (Cancelled)

105. (Previously Presented) An electrical circuit in a communications channel comprising:

means for summing,

wherein the summing means comprises means for amplifying with means for inverting feedback, and

wherein the summing means further comprises:

means for inputting a composite signal, the composite signal including a transmission signal component and a receive signal component;

means for inputting a replica transmission signal; and

means for outputting a receive signal which comprises the composite signal minus the replica signal,

wherein the means for amplifying including a first polarity input terminal, a second polarity input terminal, and an output terminal, and

wherein the summing means further comprises:

feedback means for communicating with the output terminal and the second polarity input terminal;

first resistive means for communicating with the second polarity input terminal and the composite signal; and

second resistive means for communicating with the second polarity input terminal and the replica transmission signal.

106. (Previously Presented) The electrical circuit according to Claim 105, wherein the replica transmission signal comprises a high pass signal.

107. (Previously Presented) The electrical circuit according to claim 105, wherein the replica transmission signal comprises a negative replica transmission signal as a first signal and a low pass replica transmission signal as a second signal,

wherein the second resistive means comprises a third resistive means and a fourth resistive means, and

wherein the third resistive means is for communicating with the first signal and the second polarity input terminal and the fourth resistive means is for communicating with the second signal and the second polarity input terminal.

108. (Previously Presented) The electrical circuit according to Claim 105, wherein the summing means further comprises means for receiving a current for baseline correction.

109. (Previously Presented) The electrical circuit according to Claim 108, further comprising means for pumping to control the current for the baseline current.

110. (Previously Presented) The electrical circuit according to Claim 109, wherein the pumping means controls current based on an error between an equalized baseline signal and a sliced baseline signal.

111. (Previously Presented) The electrical circuit according to Claim 108, wherein the summing means further comprises means for receiving a common-mode shift current.

112. (Cancelled)

113. (Previously Presented) A method of reducing a transmission signal from a composite signal in a communications channel, comprising the steps of:

inputting the composite signal into an active resistive summer, the composite signal including the transmission signal component and a receive signal component,

wherein the active resistive summer includes an operational amplifier with inverting feedback;

inputting a replica transmission signal into the active resistive summer; and

outputting a signal from the active resistive summer which comprises the composite signal minus the replica transmission signal,

wherein the operational amplifier includes a first polarity input terminal, a second polarity input terminal, and an output terminal, and

wherein the active resistive summer further includes:

a feedback element in communication with the output terminal and the second polarity input terminal;

a first resistor in communication with the second polarity input terminal and the composite signal; and

a second resistor in communication with the second polarity input terminal and the replica transmission signal.

114. (Previously Presented) The method according to Claim 113, wherein the replica transmission signal comprises a high pass signal.

115. (Previously Presented) The method according to Claim 113, wherein the replica transmission signal comprises a negative replica transmission signal as a first signal and a low pass replica transmission signal as a second signal, and

wherein the second resistor comprises a third resistor and a fourth resistor, and

wherein the third resistor is in communication with the first signal and the second polarity input terminal and the fourth resistor is in communication with the second signal and the second polarity input terminal.

116. (Previously Presented) The method according to Claim 115, further comprising the step of inputting a current into the active resistive summer to correct baseline wander.

117. (Previously Presented) The method according to Claim 116, further comprising the step of controlling the current for correcting the baseline wander with a charge pump.

118. (Previously Presented) The method according to Claim 117, wherein the charge pump controls current based on an error between an equalized baseline signal and a sliced baseline signal.

119. (Previously Presented) The method according to Claim 116, further comprising the step of inputting a common-mode shift current into the active resistive summer.

120. (Cancelled)